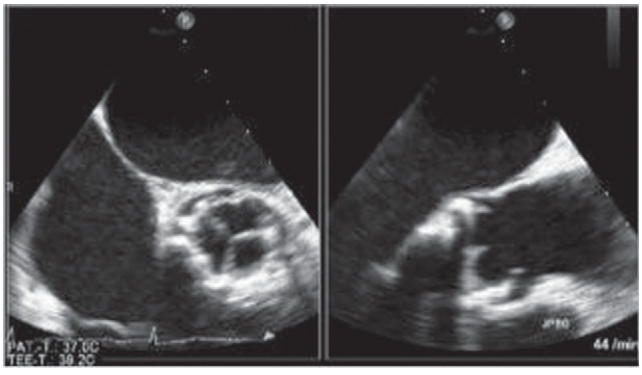
other 4 patients developed either late AVB grade III (n= 3; day 9, day 14 and day 17 post TAVI) or progressive PR-interval lengthening in the presence of postinterventional LBBB (n=1; day 5 post TAVI).
Conclusion: Therefore late occurrence of bradyarrhythmias should be recognized as a significant contributor to postprocedural outcome after TAVI. Although this is a well known phenomenon after surgical valve replacement, it is less recognized after TAVI and should be considered in all patients after TAVI.

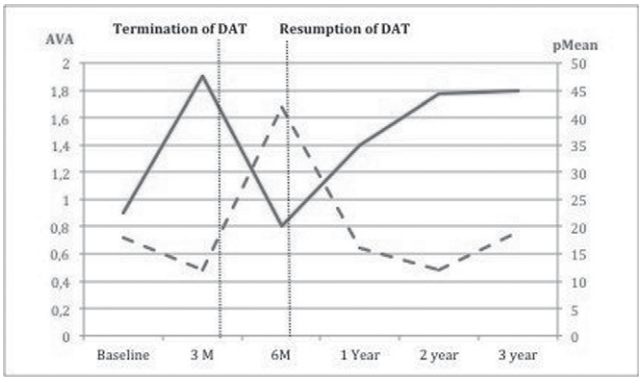
TCT-791

Transient increase in pressure gradient after TAVI – A question of dual antiplatelet therapy?

Fadi Al-Rashid[1], Polykarpos-Christos Patsalis[1], Thomas Konorza[1], Till Neumann[1], Daniel Wendt[2], Matthias Thielmann[2], Heinz Jakob[2], Raimund Erbel[1], Philipp Kahlert[1]
[1]West German Heart Center Essen, Department of Cardiology, Essen, Germany; [2]West German Heart Center Essen, Department of Thoracic and Cardiovascular Surgery, Essen, Germany

Background: Transcatheter aortic valve implantation (TAVI) has evolved to a viable tretment option for high-risk patients with severe aortic stenosis. While aspirine alone is considered adequate after bioprosthetic surgical aortic valve replacement, dual antiplatelet therapy (ASA & Clopidrogrel) is currently administrated for 6 months after TAVI to prevent thrombus formation. However, the need for dual-antplatelet therapy (DAT) and its duration is not supported by scientific evidence.
Methods: Since 2006 transfemoral TAVI was performed in 227 consecutive high-risk patients (Edwards n=139;Medtronic Corevalve n= 98). We report a case series of 4 patients who received an Edwards bioprosthesis and showed a transient increase in pressure gradients after termination of DAT.
Results: In one patient DAT was discontinued prematurely by the general practitioner at 3 months. This patient showed an increase of heart-failure symptoms (NYHA I-II → NYHA III) when he presented. This was accomplished by a significant increase of Pmean from 12 to 43 mmHg. Subsequent TEE (fig.1) revealed thickness of the leaflet tips with an impression of leaflet adhesion during opening. Resumption resulted in normalisation of pressure gradients (fig.2) and a normal valve function with unconspicious morphology. Similar findings were discovered in 3 additional cases.





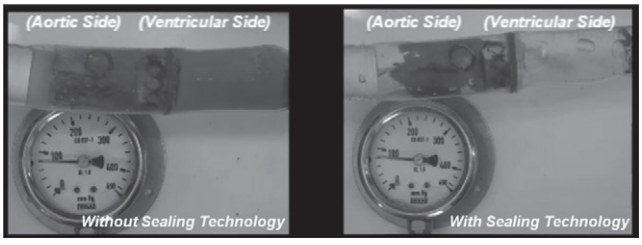
Conclusion: A transient impairment of valve function was discovered in 4 TAVI patient after termination of DAT. This raises questions regarding the duration of this medical management and might potentially offer an explanation for the late strokes observed in cohort of the PARTNER trial, namely formation of microthrombi on the non-endothelialized surface of the bovine pericardial tissue leaflet.

TCT-792

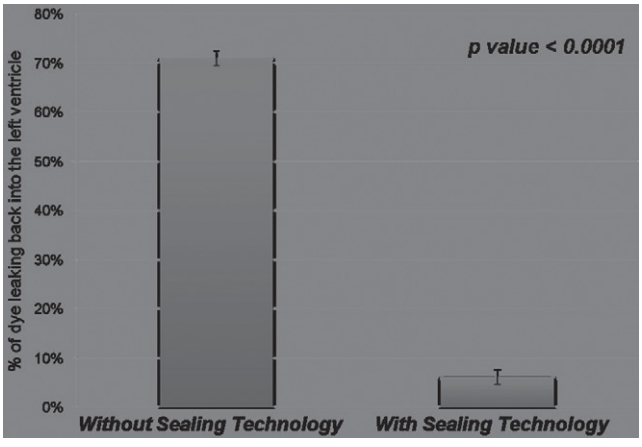
A low-profile highly conformable sealing technology for transcatheter heart valves

Martin Ng[1, 2], Victor Wong[2], Ben Bobillier[2], Beth Endersbee[2], Maude Le Hellaye[2], Charlotte Chen[2], John Murdoch[2], Michael Skalsky[2], Ashish Mitra[2]
[1]Cardiology, Royal Prince Alfred Hospital, Sydney, Australia; [2]Endoluminal Sciences, Sydney, Australia

Background: Paravalvular aortic regurgitation (PVAR) frequently occurs after transcatheter aortic valve implantation (TAVI) and moderate to severe paravalvular incompetence is associated with poorer prognosis following TAVI. We have sought to develop a novel low-profile sealing system that is compatible with contemporary TAVI systems to eliminate PVAR.
Methods: A highly conformable TAVI sealing system has been developed and adapted onto prototypes of current ballon-expandable and self-expanding TAVI systems. The sealing system is activated without change in delivery steps for each system. The safety and efficacy of the sealing system has been assessed in vitro and in vivo.
Results: When adapted onto balloon-expandable and self-expanding TAVI systems, the sealing system did not increase device profile but produces a marginal increase in deployment force (approx. 2N). Sealing efficacy was assessed in hard polycarbonate models of aortic annuli modelled from patients who had suffered moderate or severe paravalvular regurgitation following TAVI. In a 100% of the cases, the PAVR was shown to be reduced to a none/trace level. Similar results were observed with the sealing mechanism even when TAVI devices were suboptimally positioned above or below the aortic annulus and also when placed in an oval-shaped annulus.



Snapshot of simulated aortogram comparing results for TAVI device implanted in a simulated hard calcified annulus with and without the sealing technology



Percentage of dye leaked back into the ventricle calculated as a function of the dye intensity

Conclusion: A low-profile, highly conformable sealing system can effectively seal paravalvular regurgitation when adapted onto contemporary TAVI systems. Utilization of specific seal technologies may effectively address paravalvular leaks following TAVI.

TCT-793

The Importance of Aortic Annular Area and Eccentricity on Balloon Expandable Aortic Valve Sizing, Geometry and Paravalvular Regurgitation

Alex Bruce Willson[1], John G Webb[1], Stefan Toggweiler[1], Ronen Gurvitch[1], Ronald Binder[1], David Wood[1], James Min[2], Cameron Hague[1], Mark Madden[1], Leipsic Jonathon[1]
[1]Interventional Cardiology Research, St Pauls Hospital Vancouver, Vancouver, Canada; [2]Cedars Sinai Medical Centre, Los Angeles, CA

Background: Sizing of a transcatheter heart valve (THV) is often determined by two-dimensional transesophageal echocardiographic (TEE) measurement of the aortic annulus. However the aortic annulus is typically oval and may be better evaluated by multi-detector computerised tomography (MDCT). The implications of an eccentric

POSTERS